AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A crosslinking polymer-supported porous film for battery separator, comprising a porous film substrate having supported thereon a crosslinking polymer having plural cation-polymerizable functional groups in the molecule,

wherein the porous film has a porosity of 20-95 %.

2. (original): The crosslinking polymer-supported porous film as claimed in claim 1, wherein the crosslinking polymer has a plurality of at least one cation-polymerizable functional group selected from the group consisting of 3-oxetanyl group and epoxy group.

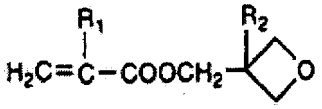
3. (original): The crosslinking polymer-supported porous film as claimed in claim 1, wherein the crosslinking polymer is a radical copolymer comprising at least one radical-polymerizable monomer selected from the group consisting of a radical-polymerizable monomer having 3-oxetanyl group and a radical-polymerizable monomer having epoxy group, and other radical-polymerizable monomer.

4. (original): The crosslinking polymer-supported porous film as claimed in claim 1, wherein the crosslinking polymer is a radical copolymer comprising 5-50% by weight of a

radical-polymerizable monomer having 3-oxetanyl group and other radical-polymerizable monomer.

5. (original): The crosslinking polymer-supported porous film as claimed in claim 1, wherein the crosslinking polymer is a radical copolymer comprising 5-50% by weight of a radical-polymerizable monomer having epoxy group and other radical-polymerizable monomer.

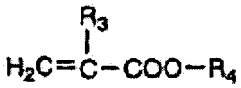
6. (original): The crosslinking polymer-supported porous film as claimed in claim 3, wherein the radical-polymerizable monomer having 3-oxetanyl group is 3-oxetanyl group-containing (meth)acrylate represented by the following formula (I):



(I)

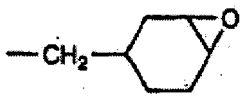
wherein R_1 represents hydrogen atom or methyl group; and R_2 represents hydrogen atom or an alkyl group having 1-6 carbon atoms.

7. (original): The crosslinking polymer-supported porous film as claimed in claim 3, wherein the radical-polymerizable monomer having epoxy group is epoxy group-containing (meth)acrylate represented by the following formula (II):

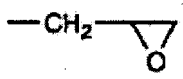


(II)

wherein R_3 represents hydrogen atom or methyl group; and R_4 represents an epoxy group-containing group represented by the following formula (1) or (2):

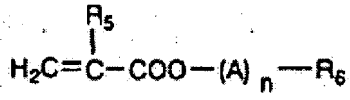


(1)



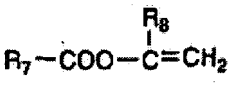
(2)

8. (original): The crosslinking polymer-supported porous film as claimed in claim 3, wherein the other radical-polymerizable monomer is at least one monomer selected from the group consisting of (meth)acrylate represented by the following formula (III):



(III)

wherein R_5 represents hydrogen atom or methyl group; A represents an oxyalkylene group having 2 or 3 carbon atoms; R_6 represents an alkyl group having 1-6 carbon atoms or a fluorinated alkyl group having 1-6 carbon atoms; and n is an integer of 0-3, and vinyl ester represented by the following formula (IV):



(IV)

wherein R_7 represents methyl group or ethyl group; and R_8 represents hydrogen atom or methyl group.

9. (currently amended): The crosslinking polymer-supported porous film as claimed in claim 1, wherein the porous film substrate has a thickness of 3-50 μm ~~and a porosity of 20-95 %~~.

10. (withdrawn): A method for producing a battery, comprising:

laminating electrodes on the crosslinking polymer-supported porous film as claimed in claim 1 to prepare a laminate of crosslinking polymer-supported porous film/electrodes,

placing the laminate in a battery container, and

pouring an electrolyte solution containing a cation polymerization catalyst in the battery container to induce cation polymerization and crosslinking of the crosslinking polymer, thereby at least partially gelling the electrolyte solution to adhere the porous film and the electrodes.

11. (withdrawn): The method for producing battery as claimed claim 10, wherein the cation polymerization catalyst is an onium salt.

12. (withdrawn): The method for producing battery as claimed in claim 10, wherein the electrolyte solution contains at least one member selected from the group consisting of lithium hexafluorophosphate and lithium tetrafluoroborate, as an electrolyte salt further functioning as a cation polymerization catalyst.